JS 10/22/21
RJA 2/18/22

# Fate Report for Case # P-18-0379

## Fate
## Summary Statement

**Fate Summary Statement:** P-18-0379
FATE:
MW = [redacted] with [redacted]% < 500 and [redacted]% < 1000
Solid
S = Negl.
VP
< 1.0E-6 torr at 25 °C (E)
BP > 400 °C (E)
H < 1.00E-8
(E)
POTW removal (%) = 90 via sorption
Time for complete ultimate
aerobic biodeg > mo
Sorption to soils/sediments = v.strong
PBT
Potential: P3B1
FATE: Migration to ground water = negl

PMN
Material:
Overall wastewater treatment removal is 90% via sorption.

Sorption to sludge is strong based on data for compounds with large molecular volume.
Air Stripping (Volatilization to air) is negligible
based on data for compounds with large molecular volume.
Removal by
biodegradation in wastewater treatment is negligible based on data for compounds with large molecular volume.
The aerobic aquatic
biodegradation half-life is greater than six months based on data for compounds with large molecular volume.
The anaerobic aquatic
biodegradation half-life is greater than six months based on the aerobic biodegradation half-life. The anaerobic biodegradation half-life is projected to be greater than or equal to the aerobic biodegradation half-life.
Sorption to soil and sediment is very strong
based on data for compounds with large molecular volume.
Migration
to groundwater is negligible based on data for compounds with large

molecular volume.
PMN Material:
Very Persistent (P3) based on the
estimated aerobic and anaerobic biodegradation half-lives.
Low
Bioaccumulation (B1) based on data for compounds with large molecular volume which limits bioavailability.
Bioconcentration/Bioaccumulation
factor to be put into E-Fast: N/A.

**CBI:** [redacted]
**Fate Assessor:** Lee, WenHsiung
**SMILES:** [redacted]

## Physical Properties

| Property | Measured/Calculated Value | EPI |
|---|---|---|
| **Molecular Form:** | [redacted] | |
| **Molecular Wt.:** | | |
| **% < 500:** | | |
| **% < 1000:** | | |

| Property | Measured Value | Method | Estimated Value | Method | EPI |
|---|---|---|---|---|---|
| **Melting Point:** | | | | | |
| **Boiling Point:** | | | >400 | | |
| **BP Pressure:** | | | | | |
| **Vapor Pressure:** | | | <0.000001 | | |
| **Water Solubility:** | | | <0.000001 | | |
| **Log P:** | | | | | |

| Property | Measured Value | Method | Estimated Value | Method | EPI |
|---|---|---|---|---|---|
| Log Kow: | | | | | |
| Log Koc: | | | | | |
| Log BCF: | | | | | |
| Henry's Law: | | | | | |

| | |
|---|---|
| pH: | |
| pH Comment: | |

## Fate Analysis

| | | |
|---|---|---|
| Hydrolysis (t1/2, da): | Volatilization (t1/2) - River (hr): | Volatilization (t1/2) - Lake (da): |
| Atm Ox Potential (t1/2)OH (hr): | Atm Ox Potential (t1/2)O3 (hr): | Atm Ox Potential (t1/2) Total (hr): |
| MITI Linear: | MITI NonLinear: | |
| Biodeg Linear: | Biodeg NonLinear: | |
| Biodeg Survey ult: | Biodeg Survey Prim: | |
| STP (% removal) Total: | STP (% removal) Biodeg: | |
| STP (% removal) Ads: | STP (% removal) Air: | |

## Rationales

| | |
|---|---|
| Removal in Wastewater Treatment: | |
| Atmospheric Oxidation: | |
| Hydrolysis: | |
| Photolysis: | |
| Aerobic Biodegradation: | |
| Anaerobic Biodegradation: | |

| | |
|---|---|
| **Sorption to Soil and Sediment:** | |
| **Migration to Groundwater:** | |
| **Persistence - Air:** | |
| **Persistence - Water:** | |
| **Volatilization from Water:** | |
| **Soil:** | |
| **Sediment:** | |
| **Other:** | |
| **Standard:** | |
| **Bioaccumulation:** | |

## PBT Ratings

| Persistence | Bioaccumulation | Toxicity | PBT Comments |
|---|---|---|---|
| **3** | 1 | | |

## Exposure-Based Testing

| | |
|---|---|
| **Exposure-Based Testing:** | |

## Fate Ratings

### Removal in WWT/POTW (Overall):

| | |
|---|---|
| **Removal in WWT/POTW (Overall):** | 90 |

| Condition | Rating Values | Rating Description | | | | Comment |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| **WWT/POTW Sorption:** | 3 | Low | Moderate | Strong | V. Strong | |
| **WWT/POTW Stripping:** | 4 | Extensive | Moderate | Low | Negligible | |
| **Biodegradation Removal:** | 4 | Unknown | High | Moderate | Negligible | |
| | | Unknown | Complete | Partial | — | |

| Condition | Rating Values | Rating Description | | | | Comment |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| **Biodegradation Destruction:** | | | | | | |
| **Aerobic Biodeg Ult:** | 4 | <= Days | Weeks | Months | > Months | |
| **Aerobic Biodeg Prim:** | | <= Days | Weeks | Months | > Months | |
| **Anaerobic Biodeg Ult:** | 4 | <= Days | Weeks | Months | > Months | |
| **Anaerobic Biodeg Prim:** | | <= Days | Weeks | Months | > Months | |
| **Hydrolysis (t1/2 at pH 7,25C) A:** | | <= Minutes | Hours | Days | >= Months | |
| **Hydrolysis (t1/2 at pH 7,25C) B:** | | <= Minutes | Hours | Days | >= Months | |
| **Sorption to Soils/Sediments:** | 1 | V. Strong | Strong | Moderate | Low | |
| **Migration to Ground Water:** | 1 | Negligible | Slow | Moderate | Rapid | |
| **Photolysis A, Direct:** | | Negligible | Slow | Moderate | Rapid | |
| **Photolysis B, Indirect:** | | Negligible | Slow | Moderate | Rapid | |
| **Atmospheric Ox A, OH:** | | Negligible | Slow | Moderate | Rapid | |
| **Atmospheric Ox B, O3:** | | Negligible | Slow | Moderate | Rapid | |

## Bio Comments:

| | |
|---|---|
| **Bio Comments:** | |

## Fate Comments:

| | |
|---|---|
| **Fate Comments:** | |

## Comments/Telephone Log

| Artifact | Update/Upload Time |
| --- | --- |
| [redacted] | [redacted] |